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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,159	07/28/2003	Stephen John Fedigan	TI-34824 / DDM03-011	4363

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TEXAS INSTRUMENTS INCORPORATED  
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EXAMINER
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FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/628,159	<b>Applicant(s)</b> FEDIGAN, STEPHEN JOHN	
	<b>Examiner</b> Devona E. Faulk	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 2/1/2007 have been fully considered but they are not persuasive.

The applicant has asserted that prior art Padi sense coil 260 is part of oscillator 281 such as 281 such as part of the tuned circuit of a Colpitts or Hartley oscillator, and thus applying a drive signal to sense coil 260 is not feasible. Further, Winker has both arm and sense coil mounted roughly like sense coil 260 of Padi so there is no suggestion in Winker to drive sense coil 260 of Padi instead of its use as a tuned oscillator. The examiner asserts that Padi discloses a sound reproduction system with an electromagnetic sensor (variable reluctance sensor) comprising a sensor coil 260 (first unit), iron core 220 (second unit), whereby the sensor coil 260 moves in response to the motion of speaker cone 230, and a signal receiving circuit 280 for receiving a resulting signal from the second unit and generating an indicating signal based upon the resulting signal that is related to the cone displacement. The examiner asserts that the applicant's response is insufficient. The applicant has not disclosed why applying a drive signal to sense coil is not feasible. In order to be entitled to reconsideration, the reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. A general

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allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section. The art rejection is therefore maintained.

2. Also, regarding the Winker reference, the applicant seems to be indicating a lack of motivation to combine. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Winker was cited for discloses a signal injecting circuit for injecting a signal into a first unit 22 and a second unit 33. The signal is used to create a capacitance bridge, which produces a frequency voltage between the plates that correspond to diaphragm movement in the speaker. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Padi as noted in the previous rejection. The examiner is maintaining the rejection.

3. The indicated allowability of claim 7-9, 13-15, and 18-19 is withdrawn in view of the newly discovered reference(s) to Joseph. Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 10-12, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Padi, US Patent 5,197,104 in view of Winker, US Patent 3,047,661.

Padi discloses a sound reproduction system with an electromagnetic sensor (variable reluctance sensor) comprising a sensor coil 260 (first unit), iron core 220 (second unit), whereby the sensor coil 260 moves in response to the motion of speaker cone 230, and a signal receiving circuit 280 for receiving a resulting signal from the second unit and generating an indicating signal based upon the resulting signal that is related to the cone displacement. Padi does not disclose a signal injecting circuit coupled to the first unit (sensor coil 260) for injecting a predetermined input signal. Winker discloses a high fidelity audio system comprising a signal injecting circuit 34 for injecting a signal into a first unit 32 and second unit 33 which are part of a motion sensing transducer. The signal is used to create a capacitance bridge, which produces a frequency voltage between the plates 32 and 34 that corresponds to diaphragm 14 movement in the speaker. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Padi by having a signal injecting circuit coupled to the

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sensor coil 260, as taught by Winker, for the purpose of creating a voltage reference upon which to detect speaker cone displacement, as was done previously in the art.

Claim 1 is rejected.

Regarding claims 10 and 16, the sensor coil 260 is the electromagnetic coil structure while the iron core 220 is the ferrous core structure. Additionally, the electromagnetic coil and iron core disclosed in Padi meets the limitations of claims 2-6, 11, 12, and 17.

6. Claims 7-9, 13-15, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Padi, US Patent 5,197,104 in view of Winker, US Patent 3,047,661 in further view of Joseph et al. (US 4,360,707)..

Regarding claims 7-9, 13-15, and 18-19, Padi as modified by Winker discloses an input signal. Padi as modified fails to disclose that the input signal is a triangular wave signal. Triangular waves as input signals are known in the art as taught by Joseph. Joseph discloses a triangle wave generator that provides an input signal (32 Figure 1). It would have been obvious to modify Padi as modified Winker so that the input signal is a triangular wave in order to provide a smooth sound.

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**Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEF

  
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